Gulf of Mexico Harmful Algal Bloom Bulletin

Region: Texas

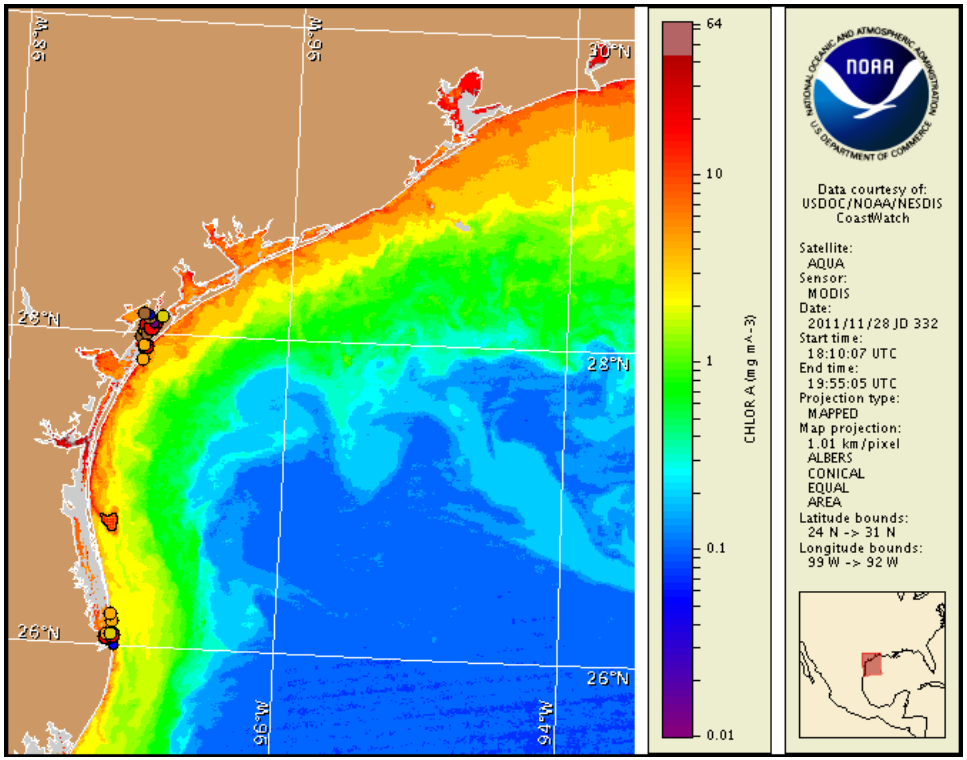
Thursday, 01 December 2011

NOAA Ocean Service

NOAA Satellite and Information Service

NOAA National Weather Service

Last bulletin: Monday, November 28, 2011



Satellite chlorophyll image with possible HAB areas shown by red polygon(s). Cell concentration sampling data from November 21 to 30 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:

http://tidesandcurrents.noaa.gov/hab/habfs_bulletin_guide.pdf

To see previous bulletins and forecasts for other Harmful Algal Bloom Bulletin regions, visit the NOAA Harmful Algal Bloom Operational Forecast System bulletin archive: http://tidesandcurrents.noaa.gov/hab/bulletins.html

Conditions Report

A harmful algal bloom is present along the Texas coast in the Aransas Pass area and within Corpus Christi Bay, alongshore the South Padre Island region, and within the lower Laguna Madre. Patchy high impacts are expected today through Sunday in the Port Aransas/Corpus Christi region, along South Padre Island, and within the lower Laguna Madre. Water samples last identified harmful algal blooms in the Galveston/Freeport area on November 17, alongshore the Matagorda Peninsula, within Matagorda Bay, and alongshore Padre Island National Seashore on November 7, and within the Brownsville Ship Channel on November 15. Associated respiratory impacts remain possible in these areas. No additional impacts are expected at the coast in Texas today through Sunday, December 4. Over the past few days, reports of discolored water have been received from Matagorda Bay and the Aransas Bay area, with dead fish reported from Aransas Pass.

Analysis

A harmful algal bloom is present along the Texas coast in the Aransas Pass area and within Corpus Christi Bay, alongshore the South Padre Island region, and within the lower Laguna Madre. Harmful algal blooms were last identified in the Galveston/Freeport area on November 17, alongshore the Matagorda Peninsula, within Matagorda Bay, and alongshore Padre Island National Seashore on November 7, and within the Brownsville Ship Channel on November 15.

No new samples have been received from the Galveston and Matagorda Bay regions, the latest samples indicated 'low a' to 'low b' *Karenia brevis* concentrations in northwest Galveston Bay (11/17; TPWD), and 'low b' to 'high' concentrations within Matagorda Bay (11/1-7; TPWD). Patches of discolored water have been reported from Matagorda Bay and San Antonio Bay (11/29; TPWD).

In the Aransas/Corpus Christi Bay region, samples indicate that *K. brevis* concentrations continue to fluctuate in several locations within Aransas Bay, but remain at 'medium' concentrations at the UTMSI pier on the Gulf-side of Aransas Pass (11/22-30; TPWD), where reports of dead fish have been received (11/29; TPWD). TPWD reports that discolored water (11/29) and 'high' *K. brevis* concentrations continue to be identified in the middle of Aransas Bay from a location north of ARA 2 (11/28) and from Fulton Harbor (11/22). 'High' *K. brevis* concentrations identified from Half Moon Reef on11/22 have decreased to 'very low a' (11/28) and a 'low a' concentration was identified nearby at ARA 7 at Long Reef (11/22; TPWD). A 'medium' concentration was identified from Rockport Harbor, with 'low a' to 'low b' concentrations collected from locations at ICCW #49 and Cove Harbor (11/22-28; TPWD). However, further north,*K. brevis* concentrations ranged between 'not present' and 'very low a' in Copano Bay and a 'low b' concentration was identified from the mouth of Dunham Bay (11/22-28; TPWD). In the southern portion of Aransas Bay, continued sampling identified a 'high' concentration from a location inside Mud Island, a 'medium' concentration from a location outside Mud Island, and two 'low a' concentrations from Long Reef/St. Jose Island (11/22-28; TPWD).

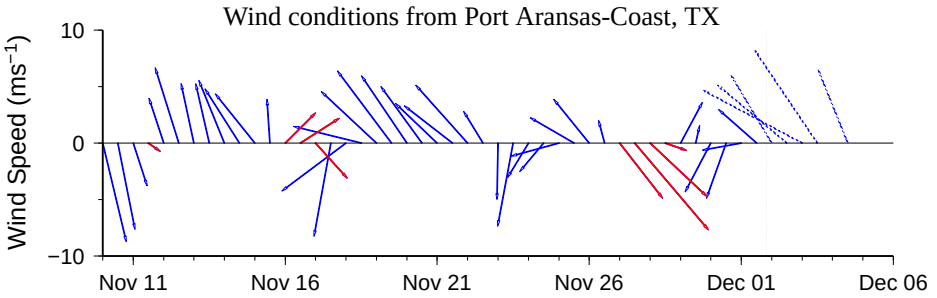
Along the Padre Island National Seashore, the last samples received indicated 'low b' to 'medium' concentrations of *K. brevis* (11/7; TPWD). In the South Padre Island region, samples indicate that *K. brevis* concentrations continue to fluctuate along the Gulf Coast.

Coastal samples collected from South Padre Island Beach Access 6 to the Boca Chica Beach at Highway 4 indicate a general decrease in *K. brevis* to a range between 'very low a' and 'medium' concentrations (11/23-30; TPWD); however, concentrations at the UTPA Coastal Studies Lab increased to 'high' on 11/30 (TPWD). Within Brazos-Santiago Pass, *K. brevis* concentrations remain between 'low a' to 'medium' (11/23-30; TPWD). Along the eastern portion of the lower Laguna Madre, *K. brevis* samples continue to indicate 'medium' concentrations from the Isla Blanca boat ramp and 'low a' to 'medium' concentrations at the east end of the Queen Isabella Causeway (11/23-30; TPWD). Within the western portion of the lower Laguna Madre, near Port Isabel, samples indicate that *K. brevis* has increased from 'very low b' to 'high' concentrations at Canal C at Long Island Village, and continues to range between 'low b' to 'medium' concentrations at the western end of the Queen Isabella Causeway (11/23-30; TPWD).

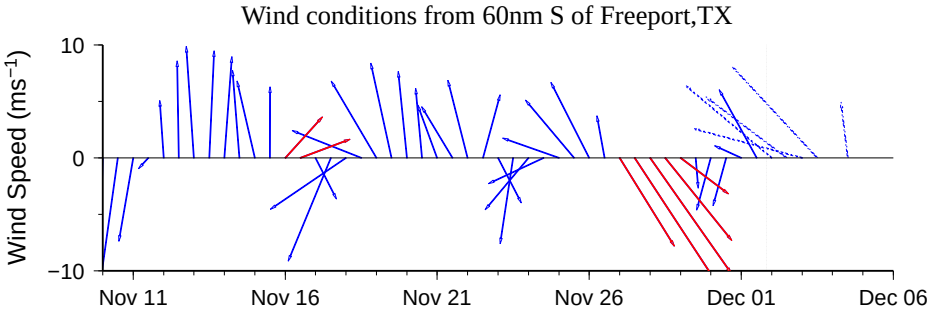
A band of elevated chlorophyll (2 to <10 μg/L) is visible along the entire Texas coastline in MODIS imagery from 11/28 (page 1) and 11/29 (not shown). MODIS imagery, from 11/28, shows a feature of high to very high chlorophyll (10 to >20 μg/L) stretching alongshore from approximately 25 km north of the mouth of Aransas Pass (28°0'39''N, 96°53'30''W), southward alongshore Mustang Island and Padre Island National Seashore, to approximately 30 km north of Port Mansfield 26°52'30''N, 97°20'60''W, with the southern edge of the feature extending approximately 15 km offshore. MODIS imagery, from 11/29 (not shown), indicates that the southern extent of this feature may have transported northward (now extending up to 25 km offshore and centered at 26°57'19''N, 97°12'46''W). It also appears to have intensified offshore, with elevated to high chlorophyll (4 to 13 μg/L) present. Sampling along the coast from San Jose Island to the southern region of Padre Island is recommended. Patches of elevated to high chlorophyll (3 to 16 μg/L) are also visible stretching alongshore the Sabine Pass region, alongshore from Freeport to the Matagorda Peninsula, and alongshore from the southern Texas border to approximately 40 km south of the Rio Grande. Elevated chlorophyll at the coast may contain *K. brevis*, but could also be due to the continued resuspension of benthic chlorophyll and sediments, making it difficult to determine the extent of blooms from satellite imagery alone.

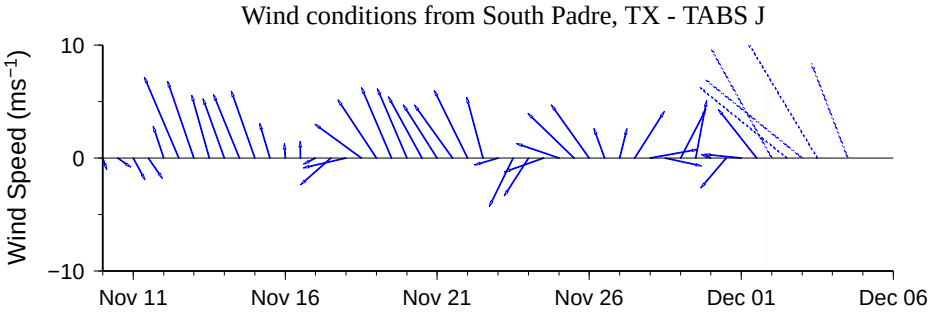
Forecast models based on predicted near-surface currents indicate a maximum bloom transport from the coastal feature identified from imagery (see above paragraph) of 10 km south from the Port Aransas region and 20 km north along the Padre Island National Seashore; forecast models also indicate a maximum bloom transport from coastal sample locations of 30 km south from the Galveston Bay region, 20 km north from the Matagorda Peninsula region, and 40 km north from Brazos Santiago Pass from November 29 to December 4. Onshore winds over the next several days will increase the potential for impacts along the Texas coastline.

Kavanaugh, Derner



Wind speed and direction are averaged over 12 hours from buoy measurements. Length of line indicates speed; angle indicates direction. Red indicates that the wind direction favors upwelling near the coast. Values to the left of the dotted vertical line are measured values; values to the right are forecasts. Wind observation and forecast data provided by NOAA's National Weather Service (NWS).



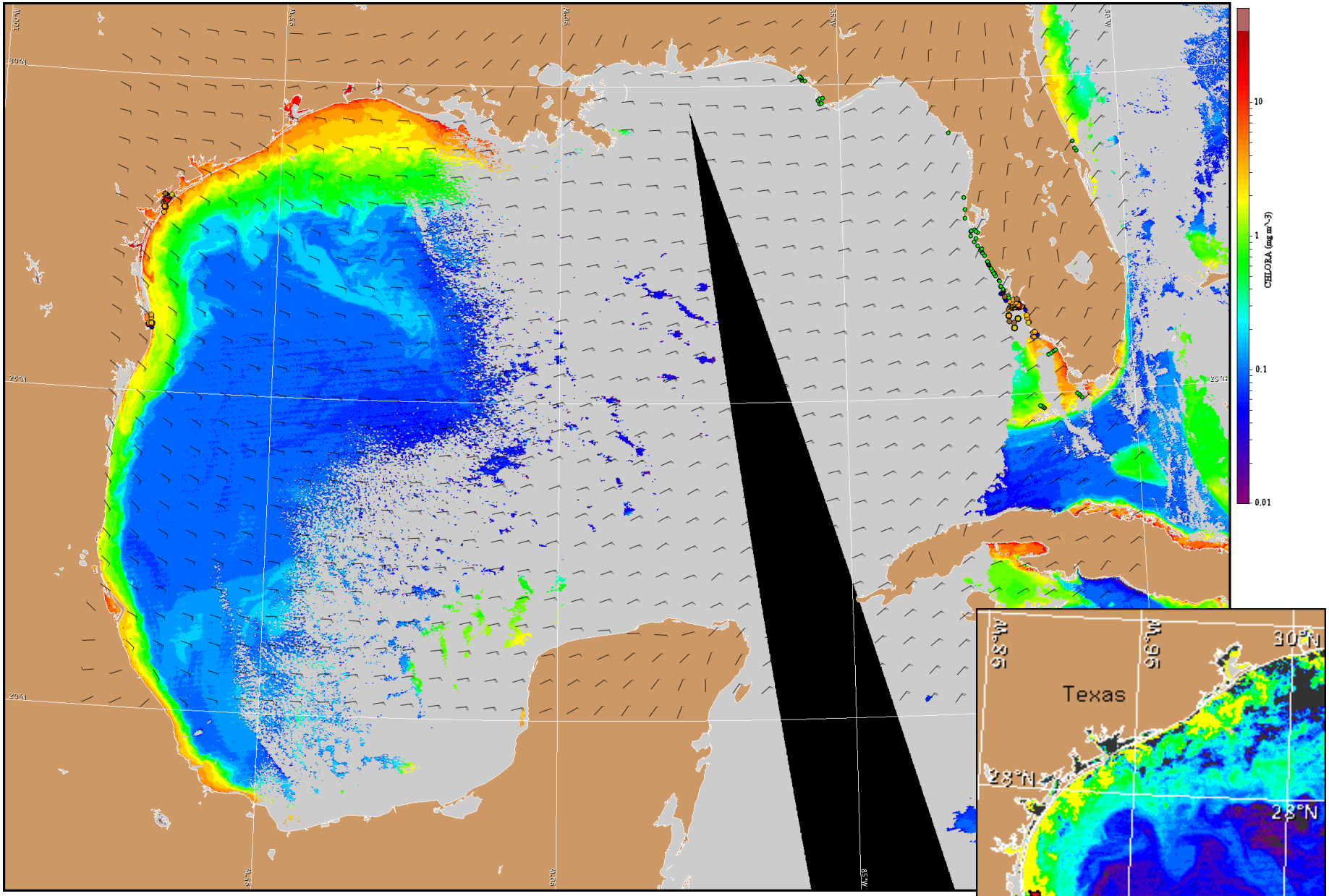


Wind Analysis

Galveston/Freeport: Southeast to east winds (10-20 kn, 5-10 m/s) today through Saturday night. South to southeast winds Sunday (5-10 kn, 3-5 m/s) becoming north winds (10-15 kn, 5-8 m/s) Sunday night.

Port Aransas: Southeast to east winds (15-25 kn, 8-13 m/s) today through Friday night. Southeast to south winds (10-25 kn, 5-13 m/s) Saturday through Sunday becoming north winds (15-25 kn) Sunday afternoon.

South Padre: Southeast winds (15-25 kn, 8-13m/s) today through Sunday. North winds (20 kn, 10 m/s) Sunday night.



Satellite chlorophyll image and forecast winds for December 2, 2011 12Z with cell concentration sampling data from November 21 to 30 shown as red (high), orange (medium), yellow (low b), brown (low a), blue(very low b), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide:
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Verified and suspected HAB areas shown in red. Other areas of high chlorophyll concentration shown in yellow (see p. 1 analysis for interpretation).